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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,204	01/28/2004	Zhiqun He	69978-012	7628
<div>7590 10/29/2007 MCDERMOTT, WILL & EMERY 600 13th Street, N.W. Washington, DC 20005-3096</div>			<div>EXAMINER MOORE, IAN N</div>	
			<div>ART UNIT 2616</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 10/29/2007</div>	<div>DELIVERY MODE PAPER</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/765,204	Applicant(s) HE ET AL.	
	Examiner Ian N. Moore	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9-14-04; 10-1-07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures **1, 2A, 2B and 3** should be designated by a legend such as --**Prior Art**-- because only that which is old is illustrated (*per specification page 2, "FIG. 1 shows...in the first prior art" and "FIG. 2A shows...in the second prior art" and subsequently "...is shown in FIG. 2B"; per specification page 4, "FIG. 3 shows...in the third prior art"*). See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The following drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

- In FIG. 4F, **step 7** (recited in specification page 15, line 3) is not included.
- In FIG. 4A (F1), **step 7** (recited in specification page 18, line 2) is not included.
- In FIG. 4A (F2), **step 6** (recited in specification page 18, line 24) is not included.
- In FIG. 5 F, **step 12** (recited in specification page 21, line 26) is not included.
- In FIG. 6 (F1), **step 11** and **step 17** (recited in specification page 26, line 17 and 30) are not included.
- In FIG. 7 (F), **step 6** (recited in specification page 27, line 15) is not included.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because it recites, "**said**" in lines 3-6, "**comprising**" in line 2, and "**comprises**" in lines 7 and 8. Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claims 1-15 are objected to because of the following informalities:

Claim 1 recites, "**the** user's network" in line 5. Since it is recited for the first time in the claim, for clarity it is suggested to change "the user's network" to "**a** user's network".

Claim 8 recites "**said** UNIs" in line 7 and "**said** NNIs" in line 8. For consistency and clarification with "at least a user-network interface (UNI)" recited in line 4 and "at least a network-network interface (NNI)" recited in line 6, it is suggested to change "at least a user-network interface (UNI)" recited in line 4 to "**at least a user-network interface (UNI) from**

plurality of user-network interfaces (UNIs)", and **"at least a network-network interface (NNI)"** recited in line 6 to **"at least a network-network interface (NNI) from plurality of network-network interfaces (NNIs)"**.

Claim 1 recites, **"the processing flow"** in line 20. Since it is recited for the first time in the claim, for clarity it is suggested to change **"the processing flow"** to **"a processing flow"**.

Claim 1 recites **"them"** in line 23. For consistency and clarification, it is suggested to change **"them"** to **"said rule database and said virtual interface processing unit"**.

Claim 2 recites, **"the corresponding relationship"** in line 3. Since it is recited for the first time in the claim, for clarity it is suggested to change **"the corresponding relationship"** to **"a corresponding relationship"**.

Claim 5 is also objected for the same reason as set forth above in claim 2.

Claim 2 recites, **"the requirement"** in line 6. Since it is recited for the first time in the claim, for clarity it is suggested to change **"the requirement"** to **"a requirement"**.

Claim 3 recites, **"the operation"** in line 4. Since it is recited for the first time in the claim, for clarity it is suggested to change **"the operation"** to **"an operation"**.

Claim 6 recites, **"the process"** in line 8. Since it is recited for the first time in the claim, for clarity it is suggested to change **"the process"** to **"a process"**.

Claim 6 recites, **"the type information"** in line 9. Since it is recited for the first time in the claim, for clarity it is suggested to change **"the type information"** to **"a type information"**.

Claim 6 recites, **"the second rule"** in line 10. Since it is recited for the first time in the claim, for clarity it is suggested to change **"the second rule"** to **"a second rule"**.

Claim 10 recites "**the** information" in line 4. For consistency and clarification with "a type information" recited in claim 6, line 9, it is suggested to change "the information" in line 4, to "**the type** information".

Claim 10 recites, "**the** address offset" in line 4. Since it is recited for the first time in the claim, for clarity it is suggested to change "the address offset" to "**an** address offset".

Claim 10 recites, "**the** data frame address offset" in line 5. Since it is recited for the first time in the claim, for clarity it is suggested to change "the data frame address offset" to "**a** data frame address offset".

Claim 10 recites, "**said** read information" in line 6. For consistency and clarification with "read the type information" recited in claim 6, line 4, it is suggested to change "said read information" to "**said read type** information".

Claim 12 recites, "**the** data type number information" in line 4. Since it is recited for the first time in the claim, for clarity it is suggested to change "the data type number information" to "**a** data type number information".

Claim 13 is also objected for the same reason as set forth above in claim 12.

Claim 12 recites, "**the** head position" in line 4. Since it is recited for the first time in the claim, for clarity it is suggested to change "the head position" to "**a** head position".

Claim 13 is also objected for the same reason as set forth above in claim 12.

Claim 14 recites, "**the** index" in line 5. Since it is recited for the first time in the claim, for clarity it is suggested to change "the index" to "**an** index".

Claims 4,7-9,11,15 are also objected since they are depended upon objected claim 1 as set forth above.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites, “a rule database which couples with **said** and” in line 18. It is unclear what is being coupled with a rule database. In the specification, per FIG. 4A and 5, rule database 850 couples to inter-device interface, control interface unit 900, virtual interface processing unit 800 and devices interfaces. Thus, it is unclear whether a rule database appears to couple to inter-device interface, control interface unit, virtual interface processing unit, or devices interfaces.

Claim 6 recites, “**a method** of accessing and transmitting different data frames in a digital transmission network **through the system of claim 1**, said system comprising a data converting device comprising a virtual interface device, **wherein said method comprises** the following steps...” in claim 1. It is unclear whether claim 6 is “a system” or “a method” claim since the claim recites both system and the method steps through the system. Thus, the claim is ambiguous.

Claim 5 recites, “**said** data processing and dispatching device” in line 6. There is insufficient antecedent basis for this limitation in the claim. It is also suggest to change “**said** data processing and dispatching device” to “**a** data processing and dispatching device.”

Claims 2-5 and 7-15 are also objected since they are depended upon objected claim 1 as set forth above.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. **Claims 1,3 and 5** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,6 and 7 of copending U.S. Patent application No. 10/765,283 (hereinafter refers to as He’283) in view of Patenaude (US 20040076166A1).

Regarding claim 1, although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the instant application is the same scope of the claim 1 of He’283 by adding the well-known elements and functions as set forth below.

<u>Claim 1 of Instant application</u>	<u>Claim 1 of He'283</u>
Limitation 1 : A system accessing and transmitting different data frames in a digital transmission network for accessing and transmitting different data frames, comprising:	Limitation 1 : A system accessing and transmitting different data frames in a digital transmission network for accessing and transmitting different data frames, comprising:
Limitation 2 : at least a user-network interface (UNI), which is used to couple with the user's network; and/or at least a network-network interface (NNI), which is used to couple with said digital transmission network to transfer data;	Limitation 2 : at least a subscriber network interface, which is used to couple with the subscriber's network (<i>i.e. UNI</i>); and/or at least an inter-network interface (<i>i.e. NNI</i>), which is used to couple with said digital transmission network to transfer data;
Limitation 3 : a data converting device, which is coupled with said UNIs and said NNIs to convert data formats between said UNIs, data formats between said NNIs, or data formats between said NNIs and said UNIs;	Limitation 3 : a data converting device, which is coupled with said subscriber network interfaces and said inter-network interfaces to convert data formats between said subscriber network interfaces, data formats between said inter-network interfaces, or data formats between said inter-network interfaces and said subscriber network interfaces;
Limitation 4 : Said data converting device comprises a virtual interface device, said virtual interface device comprises: at least two device interfaces which comprises UNIs or NNIs, for inputting or outputting data frames;	Limitation 4 : Wherein said data converting device comprises a virtual private device (<i>i.e. virtual interface device</i>), an interface device and a processing device, said virtual private device exchanges data (<i>i.e. data frames</i>) between said subscriber network interfaces and said inter-network interfaces via said interface device,
Limitation 5 : a virtual interface processing unit, which couples with said device interfaces to process said data frames and exchange said data frames between said virtual interface processing unit and corresponding device interfaces;	Limitation 5 : NONE
Limitation 6 : rule database, which couples with said and stores rules corresponding to different data frames, said virtual interface processing unit determines the processing of data frames under said rules;	Limitation 6 : a rule database, which couples with said virtual private processing unit, said rule database stores rules corresponding to various data, couples with said virtual interface processing unit to process the data according to said rules;
Limitation 7 : processing flow according	Limitation 7 : NONE

<u>Claim 1 of Instant application</u>	<u>Claim 1 of He'283</u>
to the classification	
Limitation 8 : a control interface unit, which couples with said rule database and said virtual interface processing unit to control them;	Limitation 8 : a control interface unit, which couples with said rule database and said virtual private processing unit and is used to control said virtual private processing unit and said rule database.
Limitation 9 : an inter-device interface, which couples with said virtual interface processing unit to couple with external devices to exchange data.	Limitation 9 : said virtual private device comprises an inter-device interface, which couples with said processing device and is used to input and output data frames

In view of the above, it is clear that the claim 1 of the instant application and the claim 1 of He'283 merely recited the same invention except for the virtual interface processing unit which couples with said devices (item label #5) and processing flow according to the classification (item label#7) as recited in claim 1 of the instant application.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Patenaude. In particular, Patenaude discloses a virtual interface processing unit (see FIG. 8, Channelized Mapper GFP/EoS with virtual concatenation 804), which couples with said device interfaces to process said data frames (see FIG. 8, connecting with interfaces 810,812,814,816 to process Ethernet/DS-1/DS-3/E1/E3 frames) and exchange said data frames between said virtual interface processing unit and corresponding device interfaces (see FIG. 8, transmits/receives (i.e. exchange) frames between mapper 804 and corresponding/associated unit interfaces (i.e. interfaces to policing unit 806, microprocessor unit 824, and OC-12/48 channelization 802 unit); see page 5, paragraph 47-48);

rule database (see FIG. 8, a combined policy and memory system of policing, shaping, flow-control, subscriber management 806, embedded memory 826 and external memory

interface 828), which couples with said and stores rules corresponding to different data frames (see page 5, paragraph 50-52; see page 6, paragraph 53-56; connects and stores policies/rules to SONET, TDM, Ethernet frames which are different), said virtual interface processing unit determines the processing flow according to the classification of data frames under said rules (see page 5, paragraph 46,47,51-52; see page 6, paragraph 53; Mapper 804 determines/controls/concatenates each flow/stream of data according to its priority, class-of-service, and quality of service of frames of stored policies/rules defined in a combined policy and memory system 806,826,828);

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a virtual interface processing unit, which couples with said device interfaces to process said data frames and exchange said data frames between said virtual interface processing unit and corresponding device interfaces and processing flow according to the classification, as taught by Patenaude in the system of He'283, so that it would provide compact, cost-effective and more flexible solution to providing packet network over legacy facilities; see Patenaude page 2, paragraph 16-18.

Regarding claim 3, the instant application recites wherein said control interface unit provides an external control interface, through which to inspect the operation of the virtual processing unit, and add, delete, modify and search operations are performed to rules in said rule databases (see He'283 claim 6).

Regarding claim 5, the instant application discloses said inter-device interface connects with said data processing and dispatching device (see He'283 claim 7).

The instant application does not explicitly disclose wherein said device interfaces connect with said UNIs or said NNIs, the corresponding relation between said device interfaces and said UNIs or said NNIs is 1:1.

However, Patenaude discloses wherein said device interfaces (see FIG. 8, a combined interface system comprises 24 10/100 MAC interfaces 810, Quad Gig E MAC interface 812, DS-1/E1 framer 814 interface, DS-3/E3 framer 816 interface; see page 5, paragraph 48) connect with said UNIs or said NNIs (see FIG. 6, 7b, connect with TDM 740b, 760b or Ethernet 730b, 750b interface for client/user-side which interfaces the client to network; see page 4, paragraph 44-46), the corresponding relation between said device interfaces and said UNIs or said NNIs is 1:1 (see FIG. 8, the corresponding/associating between a combined interfaces and TDM/Ethernet client-network interfaces are 1 to 1 (i.e. 1 Quad Gig E MAC interface 812 corresponds to "1" Ethernet input/output 830, 1 DS-1/E1 framer corresponds to "1" DS1 input/output 832, 1:1); see page 5, paragraph 46-47), and said inter-device interface connects with said data processing and dispatching device (see FIG. 8, a combined system of interfaces connects with APS control 820 unit; see page 6, paragraph 54).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wherein said device interfaces connect with said UNIs or said NNIs, the corresponding relation between said device interfaces and said UNIs or said NNIs is 1:1, as taught by Patenaude in the system of He'283, so that it would provide compact, cost-effective and more flexible solution to providing packet network over legacy facilities; see Patenaude page 2, paragraph 16-18.

Moreover, the doctrine of double patenting seeks to prevent the unjustified extension of patent exclusivity beyond the term of a patent.

This is a provisional obviousness-type double patenting rejection.

9. **Claims 1,3 and 5** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,6 and 7 of copending U.S. Patent application No. 10/765,205 (hereinafter refers to as He'205) in view of Patenaude (US 20040076166A1).

Regarding claim 1, although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the instant application is the same scope of the claim 1 of He'205 by adding the well-known elements and functions as set forth below.

<u>Claim 1 of Instant application</u>	<u>Claim 1 of He'205</u>
Limitation 1 : A system accessing and transmitting different data frames in a digital transmission network for accessing and transmitting different data frames, comprising:	Limitation 1 : A system accessing and transmitting different data frames in a digital transmission network, for accessing and transmitting different data frames, said system comprises:
Limitation 2 : at least a user-network interface (UNI), which is used to couple with the user's network; and/or at least a network-network interface (NNI), which is used to couple with said digital transmission network to transfer data;	Limitation 2 : at least a user-network interface (UNI), which is used to couple with the subscriber's network; and/or at least a network-network interface (NNI), which is used to couple with said digital transmission network to transfer data;
Limitation 3 : a data converting device, which is coupled with said UNIs and said NNIs to convert data formats between said UNIs, data formats between said NNIs, or data formats between said NNIs and said UNIs;	Limitation 3 : a data converting device, coupled with said UNIs and said NNIs, which is used to convert data formats between said UNIs or data formats between said NNIs or data formats between said UNIs and said NNIs;
Limitation 4 : Said data converting device comprises a virtual interface device, said virtual interface device comprises: at least	Limitation 4 : Said data converting device comprises a virtual bridge device and an interface device (<i>i.e. a combined virtual</i>

<u>Claim 1 of Instant application</u>	<u>Claim 1 of He'205</u>
two device interfaces which comprises UNIs or NNIs, for inputting or outputting data frames;	<i>bridge device and interface device is a virtual interface device</i>), said virtual bridge device switches data between said UNIs and said NNIs,
Limitation 5 : a virtual interface processing unit, which couples with said device interfaces to process said data frames and exchange said data frames between said virtual interface processing unit and corresponding device interfaces;	Limitation 5 : NONE
Limitation 6 : database, which couples with said and stores rules corresponding to different data frames, said virtual interface processing unit determines the processing of data frames under said rules;	Limitation 6 : a database, which stores information corresponding to types of data and couples with said virtual bridge processing unit so as to process data according to said information,
Limitation 7 : rule, processing flow according to the classification	Limitation 7 : NONE
Limitation 8 : a control interface unit, which couples with said rule database and said virtual interface processing unit to control them;	Limitation 8 : a control interface unit, which couples with said database and said virtual bridge processing unit so as to control them.
Limitation 9 : an inter-device interface, which couples with said virtual interface processing unit to couple with external devices to exchange data.	Limitation 9 : Said virtual bridge device comprises: an inter-device interface, which is used to input and output data frames;

In view of the above, it is clear that the claim 1 of the instant application and the claim 1 of He'205 merely recited the same invention except for the virtual interface processing unit which couples with said devices (limitation #5) and processing flow according to the classification (limitation #7) as recited in claim 1 of the instant application.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Patenaude. In particular, Patenaude discloses a virtual interface processing unit (see FIG. 8, Channelized Mapper GFP/EoS with virtual concatenation 804), which couples with said device interfaces to process said data frames (see FIG. 8, connecting with interfaces

810,812,814,816 to process Ethernet/DS-1/DS-3/E1/E3 frames) and exchange said data frames between said virtual interface processing unit and corresponding device interfaces (see FIG. 8, transmits/receives (i.e. exchange) frames between mapper 804 and corresponding/associated unit interfaces (i.e. interfaces to policing unit 806, microprocessor unit 824, and OC-12/48 channelization 802 unit); see page 5, paragraph 47-48);

rule database (see FIG. 8, a combined policy and memory system of policing, shaping, flow-control, subscriber management 806, embedded memory 826 and external memory interface 828), which couples with said and stores rules corresponding to different data frames (see page 5, paragraph 50-52; see page 6, paragraph 53-56; connects and stores policies/rules to SONET, TDM, Ethernet frames which are different), said virtual interface processing unit determines the processing flow according to the classification of data frames under said rules (see page 5, paragraph 46,47,51-52; see page 6, paragraph 53; Mapper 804 determines/controls/concatenates each flow/stream of data according to its priority, class-of-service, and quality of service of frames of stored policies/rules defined in a combined policy and memory system 806,826,828);

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a virtual interface processing unit, which couples with said device interfaces to process said data frames and exchange said data frames between said virtual interface processing unit and corresponding device interfaces; rule database and processing flow according to the classification, as taught by Patenaude in the system of He'205, so that it would provide compact, cost-effective and more flexible solution to providing packet network over legacy facilities; see Patenaude page 2, paragraph 16-18.

Regarding claim 3, the instant application recites wherein said control interface unit provides an external control interface, through which to inspect the operation of the virtual processing unit, and add, delete, modify and search operations are performed to rules in said rule databases (see He'205 claim 4).

Regarding claim 5, the instant application disclose said inter-device interface connects with said data processing and dispatching device (see He'205 claim 2).

The instant application does not explicitly disclose wherein said device interfaces connect with said UNIs or said NNIs, the corresponding relation between said device interfaces and said UNIs or said NNIs is 1:1.

However, Patenaude discloses wherein said device interfaces (see FIG. 8, a combined interface system comprises 24 10/100 MAC interfaces 810, Quad Gig E MAC interface 812, DS-1/E1 framer 814 interface, DS-3/E3 framer 816 interface; see page 5, paragraph 48) connect with said UNIs or said NNIs (see FIG. 6, 7b, connect with TDM 740b, 760b or Ethernet 730b, 750b interface for client/user-side which interfaces the client to network; see page 4, paragraph 44-46), the corresponding relation between said device interfaces and said UNIs or said NNIs is 1:1 (see FIG. 8, the corresponding/associating between a combined interfaces and TDM/Ethernet client-network interfaces are 1 to 1 (i.e. 1 Quad Gig E MAC interface 812 corresponds to "1" Ethernet input/output 830, 1 DS-1/E1 framer corresponds to "1" DS1 input/output 832, 1:1); see page 5, paragraph 46-47), and said inter-device interface connects with said data processing and dispatching device (see FIG. 8, a combined system of interfaces connects with APS control 820 unit; see page 6, paragraph 54).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wherein said device interfaces connect with said UNIs or said NNIs, the corresponding relation between said device interfaces and said UNIs or said NNIs is 1:1, as taught by Patenaude in the system of He'205, so that it would provide compact, cost-effective and more flexible solution to providing packet network over legacy facilities; see Patenaude page 2, paragraph 16-18.

Moreover, the doctrine of double patenting seeks to prevent the unjustified extension of patent exclusivity beyond the term of a patent.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Patenaude (US 20040076166A1).

Regarding Claim 1, Patenaude discloses a system (see FIG. 5, 7a-b, 8; multi-service provisioning platform system which combines ADM, DCC and terminal functionality; see page 2, paragraph 14) accessing and transmitting different data frames (see FIG. 7a-b, 9, transmission of Ethernet/TDM and SONET frames which are different; see page 2, paragraph 11-14; see page

4, paragraph 45) in a digital transmission network for accessing and transmitting different data frames (see FIG. 6, network 602 for transmission of Ethernet and SONET frames), comprising:

at least a user-network interface (UNI), which is used to couple with the user's network (see FIG. 6, 7b, TDM 740b, 760b or Ethernet 730b, 750b interface for client/user-side which interfaces the client to network; see page 4, paragraph 44,45); and/or at least a network-network interface (NNI), which is used to couple with said digital transmission network to transfer data (see FIG. 6, 7b, SONET 710b, 720b interface for network trunk which interfaces the one network to another network system; see page 4, paragraph 44,45); and

a data converting device (see FIG. 8, SONET/TDM/Ethernet mapping/converting device 800), which is coupled with said UNIs (see FIG. 8, connecting with client-user side Ethernet interface 830 and TDM interface 832) and said NNIs (see FIG. 8, connecting with network side SONET interface 834 and TDM interface 836; see page 4, paragraph 46) to convert data formats between said NNIs and said UNIs (see FIG. 8, mapping/converting SONET and TDM/Ethernet frames formats between interfaces 834,836 and 830,832; see page 5, paragraph 46-47);

Said data converting device comprises a virtual interface device (see FIG. 8, a combined interface system of 810,812,814,86), said virtual interface device comprises:

at least two device interfaces (see FIG. 8, a combined interface system comprises 24 10/100 MAC interfaces 810, Quad Gig E MAC interface 812, DS-1/E1 framer 814 interface, DS-3/E3 framer 816 interface) which comprises UNIs or NNIs, for inputting or outputting data frames (see FIG. 8, interfaces 810,812,814,816 are client-side interfaces for input and output frames (i.e. Ethernet/DS-1/DS-3/E1/E3); see page 5, paragraph 48);

a virtual interface processing unit (see FIG. 8, Channelized Mapper GFP/EoS with virtual concatenation 804), which couples with said device interfaces to process said data frames (see FIG. 8, connecting with interfaces 810,812,814,816 to process Ethernet/DS-1/DS-3/E1/E3 frames) and exchange said data frames between said virtual interface processing unit and corresponding device interfaces (see FIG. 8, transmits/receives (i.e. exchange) frames between mapper 804 and corresponding/associated unit interfaces (i.e. interfaces to policing unit 806, microprocessor unit 824, and OC-12/48 channelization 802 unit); see page 5, paragraph 47-48);

rule database (see FIG. 8, a combined policy and memory system of policing, shaping, flow-control, subscriber management 806, embedded memory 826 and external memory interface 828), which couples with said and stores rules corresponding to different data frames (see page 5, paragraph 50-52; see page 6, paragraph 53-56; connects and stores policies/rules to SONET, TDM, Ethernet frames which are different), said virtual interface processing unit determines the processing flow according to the classification of data frames under said rules (see page 5, paragraph 46,47,51-52; see page 6, paragraph 53; Mapper 804 determines/controls/concatenates each flow/stream of data according to its priority, class-of-service, and quality of service of frames of stored policies/rules defined in a combined policy and memory system 806,826,828);

a control interface unit (see FIG. 8, Embedded Microprocessor core 824), which couples with said rule database and said virtual interface processing unit to control them (see page 5, paragraph 47, 50-52; see page 6, paragraph 53-56; connects with a combined policy and memory system 806,826,828 and mapper 804 in order to process/control/manage);

an inter-device interface (see FIG. 8, a combined interface system of OC-12/48 channelization 802 unit and DS-3/E3 framer 814), which couples with said virtual interface processing unit (see FIG. 8, connects with mapper 804) to couple with external devices to exchange data (see FIG. 6, to connects with other SONET/DS-3 network devices in the network 602, 612 and 614 for transmission/exchanging of frames; see page 4, paragraph 43-44; see page 5, paragraph 46-50).

Regarding Claim 5, Patenaude discloses wherein said device interfaces (see FIG. 8, a combined interface system comprises 24 10/100 MAC interfaces 810, Quad Gig E MAC interface 812, DS-1/E1 framer 814 interface, DS-3/E3 framer 816 interface; see page 5, paragraph 48) connect with said UNIs or said NNIs (see FIG. 6, 7b, connect with TDM 740b, 760b or Ethernet 730b, 750b interface for client/user-side which interfaces the client to network; see page 4, paragraph 44-46), the corresponding relation between said device interfaces and said UNIs or said NNIs is 1:1 (see FIG. 8, the corresponding/associating between a combined interfaces and TDM/Ethernet client-network interfaces are 1 to 1 (i.e. 1 Quad Gig E MAC interface 812 corresponds to “1” Ethernet input/output 830, 1 DS-1/E1 framer corresponds to “1” DS1 input/output 832, 1:1); see page 5, paragraph 46-47), and said inter-device interface connects with said data processing and dispatching device (see FIG. 8, a combined system of interfaces connects with APS control 820 unit; see page 6, paragraph 54).

Allowable Subject Matter

12. **Claim 2** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph and objection set forth in paragraph 5, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Dependent Claim 2 are allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly disclose or render obvious the following italic limitations:

In dependent claim 2, ... *the corresponding relationship between said device interfaces and said rules is $I: N$ (N is a natural number greater than 1), and each device interface is configured as a device interface meeting the requirement of the data interface corresponding to any of the rules...*, in combination with other limitations recited as specified in Claim 2.

13. **Claims 3 and 4** would be allowable if rewritten to overcome the rejection(s) under obvious type double patenting, 35 U.S.C. 112, 2nd paragraph and objection set forth in paragraph 5, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Dependent Claim 3 are allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly disclose or render obvious the following italic limitations:

In dependent claim 3, ... *said control interface unit provides an external control interface, through which to inspect the operation of the virtual processing unit, and add, delete,*

modify and search operations are performed to rules in said rule databases... in combination with other limitations recited as specified in Claim 3.

14. **Claims 6-15** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph and objection set forth in paragraph 5, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Dependent Claim 6 is allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly disclose or render obvious the following italic limitations:


In dependent claim 6, ... if not, ending the process; if yes, obtaining the type information of the data frames, determining whether said type information complies with the second rule in the rules; if not, searching for the next rule...determining again whether said rule is found...if yes, modifying said data frames...ending the process.., in combination with other limitations recited as specified in Claim 6.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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